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COMMITTEE MEETING
STATE OF CALIFORNIA
INTEGRATED WASTE MANAGEMENT BOARD
STRATEGIC POLICY DEVELOPMENT

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COMMITTEE MEMBERS

Ms. Margo Reid Brown, Chair

Mr. Wesley Chesbro

Ms. Rosalie Mul

Ms. Cheryl Peace

Mr. Gary Petersen

STAFF

Mr. Mark Leary, Executive Director

Mr. Elliot Block, Staff Counsel

Mr. John Bell, Staff

Ms. Victoria Carvajal, Executive Assistant

Mr. Bill Orr, Division Chief, Cleanup, Closure and
Financial Assurance Division

Mr. Ted Rauh, Program Director

ALSO PRESENT

Mr. Glenn Acosta, Sanitation District of Los Angeles
County

Mr. Ray Huff, SCS Engineers

Mr. Chuck White, Waste Management

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1 PROCEEDINGS

2 CHAIRPERSON BROWN: Good morning. Welcome to the
3 July 15th meeting of the Strategic Policy Development
4 Committee.

5 There are agendas in the back of the room. If
6 anyone would like to speak to any of the items on our
7 agenda, please fill out a speaker slip and bring it to
8 Victoria up here, who is here in place of Kristen. Thank
9 you, Victoria.

10 And can you call the roll?

11 EXECUTIVE ASSISTANT CARVAJAL: Chair Brown?

12 CHAIRPERSON BROWN: Here.

13 EXECUTIVE ASSISTANT CARVAJAL: Chesbro?

14 COMMITTEE MEMBER CHESBRO: Here.

15 EXECUTIVE ASSISTANT CARVAJAL: Mulé?

16 COMMITTEE MEMBER MULÉ: Here.

17 EXECUTIVE ASSISTANT CARVAJAL: Peace?

18 COMMITTEE MEMBER PEACE: Here.

19 EXECUTIVE ASSISTANT CARVAJAL: Petersen?

20 COMMITTEE MEMBER PETERSEN: Here.

21 CHAIRPERSON BROWN: And I'd like to acknowledge
22 my new advisor for the day. Katie Brown is joining us at
23 the dais. She'll be happy to answer any questions on the
24 items on the agenda as well.

25 I'd like to remind everybody to turn your cell

1 phones to the vibrate mode.

2 And, Mark, I think you had a little agenda
3 change.

4 EXECUTIVE DIRECTOR LEARY: Just very briefly,
5 Madam Chair, I want to offer a quick explanation.

6 We will be pulling Agenda Item 12, which was
7 scheduled to be heard at the full Board. We had hoped to
8 make a comprehensive presentation on the Air Board's
9 scoping plan and all its supporting documentation. But
10 although the scoping plan has been released a week or two
11 ago, it is supported by a very substantive set of
12 appendices that were kind of pertinent to the kinds of
13 things we were doing and the kind of things we wanted to
14 talk to you about.

15 The appendices are still undergoing its final
16 review, and the best prognosis is they may not be public
17 until later on this week or early next which doesn't give
18 us a lot of time to prepare a comprehensive presentation
19 that we had hoped to present. So with your blessing, I'd
20 like to pull that item and come back in August and do the
21 full show that we had anticipated doing.

22 CHAIRPERSON BROWN: That sounds good.

23 EXECUTIVE DIRECTOR LEARY: Thank you, Madam
24 Chair.

25 CHAIRPERSON BROWN: And if we want, we can do it

1 at Policy Committee since it's a Committee of the whole if
2 we want sooner rather than later to get an opportunity to
3 hear that.

4 We may also want an update on green chemistry and
5 what's going on with DTSC's presentation with the green
6 chemistry initiative.

7 EXECUTIVE DIRECTOR LEARY: Be happy to.

8 CHAIRPERSON BROWN: Since I think some of those
9 came out in the last couple of weeks, I'd like to keep
10 everyone abreast of that.

11 EXECUTIVE DIRECTOR LEARY: Absolutely.

12 CHAIRPERSON BROWN: Then I believe we will go to
13 the first item today is Board Item 13, Committee Item C,
14 Presentation of and Request for Direction on the Results
15 of the Landfill Gas Monitoring Well Functionality Study.

16 Ted.

17 PROGRAM DIRECTOR RAUH: Yes. Good morning, Chair
18 Brown and members of the Committee. I'm Ted Rauh, the
19 Program Director for Waste Compliance and Mitigation.

20 And today our first item before you is Item 13.
21 Quite excited by this item as it culminates some research
22 the Board put together. And actually as a result of
23 staff's consideration and concern in this area, the Board
24 determined to fund research. And as a result, we are here
25 today to present that research to you. We think it has

1 some significance, and we'll be asking your direction
2 later with respect to following up with some of the
3 recommendations that have come from the consultant.

4 So at this point, I'd like to turn it over to
5 have the presentation made. John Bell, who I almost
6 forgot in my introduction, is in fact the principal for
7 the staff on this area and is the staff person who
8 identified this as an issue for the Board and really led
9 the effort to put together the contract and carry out the
10 research.

11 So, John, if you please.

12 (Thereupon an overhead presentation was
13 presented as follows.)

14 MR. BELL: Thank you. Good morning, Madam Chair
15 and Committee members. It's really great to be here today
16 finally to bring this item to you. I've been working with
17 landfill gas for over 25 years. And many times in the
18 field I've had cause to question the functionality of
19 landfill gas monitoring probes and wanted to do a study
20 like this. But finally, in 2006, the funding and the
21 technology came together and we were able to contract with
22 SCS Engineers to do this study.

23 To my knowledge, this is the first time any study
24 of this sort has ever been done like this. So I think
25 it's another first for California. Now before the SCS

1 presentation I'd like to point out a few things. This
2 study found over 30 percent of the probes studied were
3 non-functional, but I want to stress this was a scientific
4 study and not an enforcement action.

5 Permission was granted to do the study by each of
6 the site operators, and the operator representatives were
7 informed of the preliminary results of the study at each
8 site at the end of the day. The sites were picked with a
9 focus for old probes so we could see the effect of age,
10 preferably over ten years old. We did do a few new probes
11 and deep probes to maximize the surface area we could do
12 look at. The instrument was able to go down to about 99
13 feet. So we tried to maximize that. And actually we saw
14 about one and two-thirds miles of surface area of probes.
15 So that's a lot of probes that we looked at.

16 Not all probes were compliance probes. That's
17 important to remember. They may have been at one time,
18 but they might have been replaced. But they still had the
19 construction and all the other issues we're looking for.

20 I was present at all sites with the exception of
21 the Huntington Beach Sports Complex, which was the 20th
22 site. And I picked the actual probes that were evaluated
23 based on these criteria.

24 Now I'd like to introduce Ray Huff, who's a
25 project manager for SCS Engineers, and he'll give a

1 presentation on the study. Ray.

2 MR. HUFF: Thank you. Good morning, everybody.

3 What I wanted to do was cover very quickly the objectives
4 of the study --

5 CHAIRPERSON BROWN: Can you make sure your
6 microphone is on?

7 MR. HUFF: Is that better?

8 CHAIRPERSON BROWN: Yes.

9 MR. HUFF: What I wanted to go do was go over the
10 objectives of the study and then detail our overall
11 approach on how we went about the assessment of the
12 various probes at the site, certainly discuss our findings
13 of it, and then go over some of the recommendations that
14 we came up with.

15 And as John said, it's very important to note
16 that our study was a scientific one. We weren't going out
17 to verify compliance or non-compliance for the various
18 probes that were on the site. Certainly based on what we
19 found, we may need to look toward regulations about the
20 overall probes' construction and maintenance over time.
21 And that's what we're here to discuss today.

22 --o0o--

23 MR. HUFF: So the objectives of the study were
24 certainly first to determine the functionality of gas
25 migration monitoring probes. And just so everyone is

1 clear, for purposes of this presentation, we consider
2 probes to be individual monitoring points that would be
3 within a well bore or a single well location. For
4 example, a well that's located on the site may have three
5 different probes in it screened at different depths. And
6 hopefully that's clear to everybody. I'm more than happy
7 to go into additional detail later.

8 We were looking to see if monitoring data
9 collected is in fact representative of the actual soil gas
10 conditions in the vicinity of the probe. To that regard,
11 we looked both down the probe as well as at surface
12 emissions that were around the top of the probe, because
13 we were considering lithology as well as the construction
14 of the probes.

15 So based on our findings, we wanted to recommend
16 enhancements to the existing regulations.

17 --o0o--

18 MR. HUFF: So as John indicated, we had 20
19 landfills that we looked at for this study. And we
20 decided basically approach ten landfills in northern
21 California and ten landfills in southern California.

22 And as you can see here, we covered Clovis,
23 Ukiah, Crazy Horse Landfill, Kiefer, Corral Hollow,
24 Hillside, Buena Vista, Anderson, Redding and Red Bluff
25 Landfills in northern California.

1 In southern California we took a look at Azusa,
2 Bradley, the City of Huntington Beach Landfill, Olinda
3 Alpha, Coyote Canyon, Upland, Milliken, South Chollas,
4 South Miramar, and the Otay Landfill.

5 We did ten probes per site. And once again, the
6 differentiation between what a probe is and what a well is
7 important here. A well may contain multiple probes. We
8 looked at ten probes per site. So some probes were
9 co-located within a single well. Other probes were within
10 their own wells. So we looked at ten probes per site.

11 We ended up with 190 probes in the study. You
12 would think we would have 200 with 20 sites and ten probes
13 per, but there are about ten probes that we had to remove
14 from the study because they were actually deeper than our
15 monitoring equipment would allow for us to evaluate for
16 functionality. Therefore, it wasn't fair to include them
17 in our statistics for functionality since they were
18 outside of the scope of our equipment.

19 So looking at an overview of what we did, we
20 developed a work plan which we submitted to the Waste
21 Board, and it included this overall approach. We had
22 pre-assessment work, initial condition assessment, gas
23 monitoring, vacuum testing of each probe. We had a
24 borescope inspection and we performed lithology
25 evaluation.

1 What I'll do now is go into more detail on each
2 one of those components as far as our approach.

3 --o0o--

4 MR. HUFF: So under pre-assessment activities, as
5 John indicated, we provided pre-notification to each site
6 that we were going to come out, and we got their
7 cooperation. Every site was happy to work with us. When
8 we got on site, we made sure to take a look at the
9 landfill. And that was where John actually selected most
10 of the probes was on site.

11 And based on the age of the probes, we wanted to
12 get probes that hadn't been newly installed. We were
13 looking at functionality over time. So certainly to
14 assess a probe that was a few days old or few weeks old,
15 it wouldn't make as much sense as looking at one maybe
16 ten years or 20 years old, which we had on some of these
17 sites.

18 In addition, because we were doing gas monitoring
19 and pressure monitoring, we wanted to take a look at
20 ambient atmospheric conditions. So we looked at the
21 weather, barometric pressure, temperature, as well as wind
22 speed and direction. And all this information was put
23 down on our field forms for recordkeeping purposes and we
24 actually scanned scandal all that information and it's
25 included in the final report.

1

2

--o0o--

3

MR. HUFF: Our initial condition assessment first was to take a look at the location of the probes. All of the sites maintained maps where they have their probe location. So our first order of business was to take the ten randomly selected probes and make sure that the maps easily identified where those were.

9

Second, we looked at within each well to make sure the individual probes were identified correctly. Did they say the name of the probe, the depth of the probe, the depth interval? Was it easy to determine which probe in a well we were evaluating?

14

Next we took a look at the well head assembly or the probe head assembly. And that is the individual sampling valves and making sure that you could actually connect to a probe without exposing it to atmospheric conditions. Since we were looking at pressure, it was a very important point for us.

20

Then we also did surface emissions monitoring where we looked for methane emissions around the surface of the probe. Certainly it gives us a general indication about the well seals for each probe and what the final completion is. It also gives us a general idea of what's happening in the area so we can get an idea of what's

1 happening sub-surface with the probe.

2 --o0o--

3 MR. HUFF: Once we completed our initial
4 assessment, we did a gas monitoring assessment where we
5 connected a gas extraction monitor to each probe and we
6 took a look at initial pressure, because we wanted to get
7 an idea if there's a significant variation from ambient.
8 You would normally see probes that do have some variation
9 for ambient, either positive or negative. Positive
10 pressure is generally indicative of gases wanting to
11 migrate away from or out of the probe. They could be
12 landfill gases. It could also be barometric fluctuation.
13 But what that tells us if you have a positive or negative
14 pressure is that the probe is in tact because it's not
15 going to be exposed to ambient atmosphere. Therefore,
16 probes with either negative or positive pressure were
17 generally considered functional.

18 Second, we looked at landfill gas monitoring, our
19 indicators of landfill gas, which includes methane, carbon
20 dioxide, oxygen. We also looked for carbon monoxide and
21 hydrogen sulfide.

22 Next we looked at ambient oxygen analysis from
23 our landfill gas monitoring parameters, because we were
24 looking for ambient levels of oxygen. Certainly we're
25 thinking oxygen should decrease with depth. And if you

1 get ambient levels of oxygen in deeper probes, it's
2 indicative of ambient atmosphere getting into that probe.
3 A shallow probe it's more understandable than a relatively
4 deeper probe. So once again, these were used as
5 indicators.

6 And one thing we should probably point out and I
7 will in a few minutes I'll elaborate more. But no single
8 evaluation parameter is a go, no-go on the functionality
9 of a probe. It actually is looking at a lot of different
10 parameters and taking them all into consideration.

11 So we also looked at a depth trend analysis. And
12 as I said, generally oxygen should decrease with depth.
13 And you would expect carbon dioxide to increase. That's
14 the type of trend we looked for on these probes. And
15 generally we found it. There were a few we didn't.

16 We also looked at methane concentration. Once
17 again, if there is methane in a probe, either in violation
18 of regulatory standards or not, it's generally indicative
19 that there is a good monitoring of soil gas conditions in
20 the sub-surface which was the intent of the study.

21 --o0o--

22 MR. HUFF: We also performed vacuum testing. And
23 what we did under vacuum testing was we actually applied a
24 known vacuum to each probe. We had a vacuum pump set up,
25 and we evacuated the air in the probe or the gases in the

1 probe, and we looked at the change or the flux in vacuum
2 over time. And as you can see from the example on the
3 slide, you can see we initially slide 31 inches of vacuum
4 to a probe.

5 Second, after 30 seconds, it had reduced to 16
6 inches. After 60 seconds, it had reduced further. And 90
7 and 120 and so on. That's generally the type of recovery
8 curve you'd like to see on a probe, a gradual recovery.
9 It shows there's gases coming in from the batos zone in
10 the sub-surface where the screened interval is. It's not
11 an initial complete recovery, which could be indicative of
12 a damaged or non-functional probe. However, we found it
13 can be indicative of a very permeable lithology. Because
14 a lot of landfills are put into old gravel pits where you
15 have a very permeable lithology and therefore you get a
16 lot of atmospheric intrusion. And that also applies to
17 ambient oxygen levels in the probes as well.

18 --o0o--

19 MR. HUFF: Next we performed a video borescope
20 inspection. And we did down-whole video logging of each
21 probe in the study. We had a -- I think it was about six
22 to nine millimeter borescope that used fiber optics. And
23 we would lower it down each one of the probes to its
24 maximum depth, which was 99 feet. And even today,
25 two years after the study, that is still the maximum depth

1 of the technology.

2 So we performed a visual inspection. We actually
3 have a video log of each and every probe, and there were
4 two reasons for doing this. One was to look at probe
5 construction and verify it against the construction logs.
6 And second was to look for possible obstructions. As you
7 can see on this slide in the example, that is a picture of
8 root intrusion into a probe.

9 --o0o--

10 MR. HUFF: Lastly, we did a lithology evaluation.
11 Under 20925(c)(1)(d), the probes -- they're preferentially
12 located adjacent to soil that are most conducive of gas
13 flow. That's the directive that's in the regulation.
14 What we wanted to do was make sure that the construction
15 logs matched the screened interval. Certainly there's not
16 a lot we can do in the field looking at the lithology.
17 That was more of a secondary study on evaluating the
18 boring logs. But as we'll discuss, we found there was
19 some variation from this regulatory directive.

20 --o0o--

21 MR. HUFF: Now I'd like to go over some of the
22 findings, and we have some examples. On initial
23 conditions, we had some fairly favorable findings. We
24 found that there was only one out of 190 probes that was
25 incorrectly marked on the map. By the way, I'm sure by

1 the time we left the site that day that probe was
2 correctly marked on the map.

3 Identification, there were about 15 out of 190
4 probes evaluated that were difficult to identify. And
5 when they talk about identification, we're looking at
6 things like were the probes marked with their name and
7 depth. Some probes actually had a color coordination.
8 The deep probe was blue. The mid-depth probe was yellow.
9 And the deep probe was orange. The problem is we couldn't
10 determine what the color codes were until after the video
11 borescope inspection and then it started to make sense.

12 Also on the probe head assembly, we actually had
13 ten out of the 190 that were absolutely missing their
14 caps. There were just open probes open pipe. There were
15 also some very creative ways that we found that people had
16 closed their probes. Some had bicycle valves. Some just
17 had stoppers plugged into the probes. And we came up with
18 a few recommendations of maybe a better way to do things
19 than that.

20 Also on surface emissions monitoring, we found
21 that a little under ten percent, 16 out of 190, did have
22 some form of surface emissions. We found the most
23 significant surface emissions ended up being because there
24 was a probe that had a significant amount of methane that
25 had been left open. So it was actually venting. And we

1 quickly corrected that while we were on site.

2 --o0o--

3 MR. HUFF: So this slide shows some of the
4 photographs from our study and it shows a few of the
5 initial conditions. As you can see in -- here in the
6 upper left-hand slide, these are bicycle valves that were
7 put into a slip cap. Not very conducive to actually
8 getting good pressure readings. And we actually had to
9 remove those in order to assess the probe.

10 On the next one, we actually had stoppers that
11 were put into the top of the probe. What we would prefer
12 to see is down here in the lower left-hand side, these are
13 valves with ID tags that were stamped with the probe
14 information as well as depth.

15 And then the lower right-hand slide you can
16 actually see there's a monument box that has a sign that
17 was made up identifying the probe.

18 --o0o--

19 MR. HUFF: Our findings under gas monitoring,
20 when we looked at initial pressure, we found that 113 out
21 of 190 probes had no pressure in them. And as we
22 indicated before, we were generally looking to see
23 slightly positive or slightly negative pressures in order
24 to be indicative of a probe that's closed off from the
25 environment. However, the very fact that we did have so

1 many probes at zero pressure doesn't mean all these probes
2 were non-functional.

3 As we looked at the lithology for each site as
4 well as historical probe readings from these probes and
5 others that were on site, we found that generally there
6 just happens to be a lot of sites that we selected that
7 had a highly permeable lithology. But once again, it's
8 okay if there is no pressure in the probe because there
9 are fluctuations in barometric pressure. But it's
10 certainly something that drew our attention and that we
11 further evaluated as we looked at the other monitoring
12 parameters.

13 Under landfill gas monitoring, we found no
14 hydrogen sulfide or carbon monoxide in any of the probes
15 that were monitored, which is always good news.

16 We did have some ambient oxygen levels on these
17 probes. And this is where we started to connect things
18 like initial pressure and ambient levels of oxygen. Those
19 could be indicative of a non-functional probe.

20 Under our ambient oxygen analysis, you can see we
21 had 37 out of 190 probes with what we call ambient or
22 greater than 20 percent oxygen levels. Once again, some
23 of those were shallow probes. But it does look like some
24 of those might have had ambient air intrusion.

25 On our depth trend analysis, out of 75 wells,

1 once again there were multiple probes in a well, so we had
2 75 wells that we evaluated, 21 out of those wells had
3 increasing oxygen with depth, which is counter to what we
4 would assume would happen. Once again, there's lithology
5 reasons for it. We wanted to look at all the different
6 parameters, but certainly that would give us pause.

7 On methane concentration, we had 23 out of 190
8 probes that had methane levels that were greater than five
9 percent, which is the regulatory threshold. But it also
10 should be noted that not all the probes that were included
11 in the study were parameter compliance probes. Some were
12 pre-compliance probe that was closer to the refuse that
13 just happened to be available. So there were many
14 different types of probes that were looked at. But
15 generally I think our goal is to look at compliance
16 probes, although not all of them work.

17 --o0o--

18 MR. HUFF: Under vacuum testing, the results
19 showed that we had vacuum recovery -- it's actually better
20 for determining functionality or proving that a probe is
21 valid versus proving a probe is non-functional. That's
22 because it's very nice to see a decreasing vacuum over
23 time. But in concert with the initial pressures of zero
24 that we found, we saw a lot of these probes recovered
25 their vacuum instantly. So that once again doesn't mean

1 the probe is non-functional, but it is another line of
2 evidence that would give us pause at evaluating the
3 probes.

4 We also saw that no vacuum recovery -- for
5 instance, when we applied 30 inches of vacuum and after
6 two minutes we still had 30 inches of vacuum on a probe,
7 that was indicative of a clogged probe. You would expect
8 to see some type of gas migrating through the sub-surface
9 relieving the vacuum we had put on that probe. So those
10 were generally fairly fail safe to find that when we
11 didn't have a vacuum recovery, we did in fact have a clog.

12 --o0o--

13 MR. HUFF: And on the video borescopes, as I said
14 before, we actually had two things we were evaluating:
15 Primarily probe construction observations; and
16 secondarily, probe obstruction observations.

17 Under construction, we were looking at the
18 screened interval verification to see if it matched up
19 with the logs. And we also wanted to take a look at pipe
20 connections. And this is one of the things that John and
21 I discussed in the study early on. And that is how does
22 one go about connecting the pipes that go to construct a
23 probe. And as we're going to show you, there are a lot of
24 different ideas behind that.

25 Under obstructions we actually found that there

1 was some soil inside probes, roots, insects. We actually
2 found a piece of paper of there as we'll show you. There
3 was actually construction materials inside the probes as
4 well. Bentonite, some nails that went through the probe,
5 and a significant amount of PVC shavings, which is
6 generally indicative of probes that were perforated out in
7 the field and they were drilled through and then the
8 probes were assembled prior to getting all of those
9 shavings out. The difficulty was that it limited the
10 borescope to go down the hole, although PVC shavings by
11 themselves would likely allow for gas transmission through
12 the probe.

13 --o0o--

14 MR. HUFF: And here are some of our construction
15 observations. As you can hopefully see in the upper
16 left-hand slide, we have an example of a probe that has
17 screen on the top and bottom. You can see small slits in
18 the side of the probe. We're actually looking down the
19 probe in this slide.

20 On the upper right-hand slide, you can see a
21 probe that has perforations. And right now the mouse is
22 pointing at one of those perforations and other ones over
23 here, et cetera, et cetera. You can actually see a row of
24 them going down. So it's very easy to determine screened
25 interval and/or perforated interval.

1 However, a couple of landfills that we saw -- for
2 instance, this one actually had the construction with a 90
3 degree turn on the probe. And it turns out our equipment
4 that we used to do the video borescope evaluation did not
5 allow for articulation of the camera. So we couldn't
6 rotate the camera and navigate that turn. This probe is
7 not non-functional. This probe is valid. It actually had
8 gas concentrations that were good, but we couldn't verify
9 its construction.

10 And then you can see on the lower right-hand
11 corner we actually have a probe that was assembled with
12 screws. And that is a screw that's protruding from the
13 casing of the probe inside. And the screw we found, one,
14 it wouldn't let our camera navigate by.

15 Secondarily, there is something to be said about
16 whether or not that is an air tight seal, what is the seal
17 like in these different sections. For instance, this
18 could be very well be in a gravel backfill section of the
19 probe. We weren't sure. And this generally is not
20 detailed on construction logs.

21 --o0o--

22 MR. HUFF: As far as probe obstructions are
23 concerned, a good example of an obstruction is this
24 picture in the upper left-hand corner. And what we see is
25 one of probably a myriad of things. It is either, one, a

1 pipe that is inside of our probe; or two, which I tend to
2 think more about, it could be a transition from a smaller
3 diameter to a larger diameter pipe. It could also be a
4 change in the gauge of the PVC from schedule 40 to
5 schedule 80. It was an obstruction for our camera, not
6 necessarily an obstruction for gas flow.

7 On the upper right-hand slide, this is actually
8 an image of mud Bentonite soil that was at the base of a
9 probe. So somehow soil got inside the probe and
10 obstructed the bottom of it. The good news is this probe
11 in particular the obstruction was at the very bottom of
12 the screened interval. So it wasn't that significant.

13 Down here in the lower left, this is an example
14 of a piece of paper that ended up down the probe pipe.
15 You can actually see letters here on the side. I'm not
16 familiar with any PVC that's labeled on the inside, so we
17 assumed it was paper that had been shoved down.

18 Now the next one is going to take a little bit of
19 interpretation for everybody to take a look at, but I
20 think I can illustrate. There are eyes here and here.
21 There are legs here and here. And the body of a
22 salamander is right here. So we actually found life down
23 these probes.

24 COMMITTEE MEMBER CHESBRO: I have a question
25 about this and the insects. Are these some kind of new

1 adaptations of species that can breathe landfill gas?

2 MR. HUFF: Well, most of these probes turns out
3 they were compliant. So -- but yes.

4 So under our lithology evaluation, we found that
5 the probes were generally screened with coarse-grained
6 lithologies, which once again goes towards a minimal
7 pressure and a quick vacuum recovery if a probe is
8 screened in coarse-grained lithology. We found at sites
9 where probes were screened in finer grained lithologies
10 there weren't any more coarse-grained lithologies that
11 they could have selected, although there were a few
12 variations.

13 We found that ten out of 190 probe constructions
14 varied significantly, meaning greater than ten feet from
15 the intended installation that was incited on the
16 lithology and the completion logs. This could be an
17 example of not getting updated logs or having
18 pre-installation logs turned in as post-installation logs.

19 --o0o--

20 MR. HUFF: So next we wanted to look at our
21 functionality determination. And there was quite a bit of
22 discussion of the term functional and how it applies,
23 because I know this is probably going to become
24 significant regulation in the future. So we defined it as
25 for this study based on combination of observations,

1 including condition, location of screens intervals,
2 general condition of the well of probe, presence of
3 ambient air in the probe, flooding and other factors.

4 Some probes that we identified as non-functional
5 may in fact easily be deemed functional with some minimal
6 effort. For example, probes that had no caps on them.
7 Those, you put a cap on, and it's not that big of a
8 consideration and the probe can be functional. Other
9 probes that we deem non-functional because we couldn't get
10 our equipment down, maybe they're not good candidates for
11 the study, but maybe we just do a small construction
12 modification to the existing probes and they're okay.

13 And also some of these you would really need to
14 go back and significantly review historic readings. For
15 instance, we had probes that had really apparently ambient
16 air that were inside the probe, and they had immediate
17 vacuum recovery. But if you go back and look
18 historically, that's how the probe has been since square
19 one. There's two arguments that can be made to that.
20 One, the probe was installed incorrectly from square one,
21 or two, that's just the situation and the environment for
22 that probe.

23 --o0o--

24 MR. HUFF: So generally we found that about 32
25 percent -- and I've heard it range from 20 to 30 depending

1 on interpretation, but our study determined 32 percent of
2 the probes were determined to be non-functional for
3 purposes of the study.

4 Twelve probes we couldn't determine because we
5 believe we needed additional data to determine
6 functionality.

7 And 117 of the probes were identified as
8 functional.

9 Honestly, I think these are great numbers
10 considering that previously probes had been -- probe
11 condition had been unregulated and really unknown.

12 --o0o--

13 MR. HUFF: So in conclusion, we found for probe
14 identification that proper labels are necessary for valid
15 probe monitoring. What we would hate to see from a
16 consultant's perspective is monitoring the wrong probe and
17 assuming it was a deep probe when it was a mid depth probe
18 or shallow when it was deep, et cetera.

19 Although 25 out of the 190 we evaluated were not
20 properly labeled, only four were actually mislabeled. And
21 we were able to clear that up with the site contacts. We
22 certainly let them though they had some incorrectly
23 labeled probes, because we had verified with the borescope
24 a shallow probe was in fact a mid depth probe and vice
25 versa.

1 For surface emissions, generally we found that
2 surface emissions around the well were not found to be any
3 type of issue. We had very minimal surface emissions. So
4 it goes to show very good surface completions or lack of
5 shallow gas migration.

6 COMMITTEE MEMBER CHESBRO: That was true the
7 non-functional ones as well?

8 MR. HUFF: Correct. And I can certainly get into
9 the details of this. But for a probe to be
10 non-functional, it may have been found to pass one or two
11 of our tests. But for two or three of the other tests, it
12 did not pass. So we deemed it as non-functional.

13 BOARD MEMBER CHESBRO: So non-functional doesn't
14 necessarily mean it was improperly gathering the gas that
15 might be emitted in other ways?

16 MR. HUFF: Generally that was our take on it.
17 But there were some examples that would indicate that
18 there was valid gas being gathered.

19 COMMITTEE MEMBER CHESBRO: So this is not meant
20 as a sarcastic question. But then if that's true, what's
21 the point of the whole thing? Isn't what we're trying to
22 determine is whether or not they're properly doing their
23 job? And maybe I'm missing something here.

24 MR. BELL: Well, the purpose from the Board's
25 perspective was to determine are these probes properly

1 monitoring the soil gas in the vicinity of the probe.
2 They're designed to tell that the soil gas is in a
3 particular portion of the site depending on the spacing of
4 the probes. So non-functional to us is a probe that's not
5 properly doing that.

6 COMMITTEE MEMBER CHESBRO: So the pipe may be
7 functioning perfectly well, but the probe is not
8 monitoring it?

9 MR. HUFF: Correct. And a good example of that
10 would be a construction where we saw a couple of probes
11 that, although they were functioning adequately, they had
12 less than a foot screened interval on them. Which we
13 didn't think was going to be very indicative of
14 monitoring, especially for an area that was probably 50
15 feet thick.

16 MR. BELL: And in a case like that, the probe
17 might have found higher levels of gas had the screen been
18 the proper length. In other words, it was picking up gas,
19 sure, but it might have picked up more.

20 You wouldn't design a probe to be 50 feet deep
21 with a one foot of screen. You wouldn't do a design that
22 way because you want to pick up as much of the surrounding
23 areas as possible to be indicative of that depth.

24 MR. HUFF: And that does jump ahead a bit, but
25 John brings up a good point. And that is there currently

1 aren't regulations that dictate screened intervals on
2 probes. There's regulations that dictate that you have to
3 have screens and they need to be placed at certain depths,
4 but it doesn't talk about the length or construction.

5 So getting back to our conclusions, we found that
6 the use of screws for pipe coupling is definitely
7 questionable. We're not sure if there's air intrusion
8 there. It wouldn't allow our equipment to get all the way
9 down. We couldn't verify where the screws were based on
10 the construction logs, so we didn't know what the seal was
11 outside of where the screws were.

12 We found the probe well heads were generally
13 designed to function with a few exceptions. I think we
14 saw a couple of examples.

15 And we found that depth to water in the screened
16 interval should be taken into account when designing and
17 constructing probes. Meaning a longer screened interval
18 is generally going to give you a better possibility of
19 getting gas in a probe. And under the example of a probe
20 that had a single foot of screened interval, imagine there
21 was water fluctuation and that screened interval flooded,
22 that probe is now essentially non-functional, although
23 water could decrease over time and the probe could come
24 back into functionality.

25 We also looked at durability of the materials.

1 And generally we found that the probes were constructed
2 with PVC and that that's adequate, even for probes that
3 were installed as early as -- I think the earliest one we
4 looked at was maybe '89 as far as probe construction.
5 They still have good integrity.

6 --o0o--

7 MR. HUFF: So based on this, we came up with a
8 series of recommendations. Certainly our recommendation
9 is that probes should be individually labeled with
10 information such as the well ID, their relative depth.
11 Screened interval would be nice, because we don't always
12 have construction logs. And we provided an example of
13 what one could look like.

14 We also believe probes should be constructed with
15 longer screened sections. This would cover any situation
16 where you're questioning whether the lithology is coarse
17 enough. And also reduces the possibility of bio fouling
18 and it takes care of some flooding issues.

19 --o0o--

20 MR. HUFF: We also recommended under probe
21 assembly that threaded couplings are preferred over slip
22 couplings as well as screwed or glued connection.

23 And John and I were discussing this prior to this
24 presentation, and there are some probes out there that
25 were likely constructed with PVC cement, which does

1 contain VOCs. Intends to melt the PVC. And with the
2 utilization of these probes for the Air Board, Air
3 Districts have their regulations that pertain to some
4 probes as well as some of the health risk concerns that
5 are in the regulations now. Probably it's not a good idea
6 to construct them with VOC containing materials.

7 We also noted that probe head assembly should
8 contain some form of non proprietary locking valve or a
9 quick connect. We saw all different myriad of valves that
10 were on there. We're looking for something that a
11 regulator could possibly come on site, connect to easily.
12 We're not looking for something that is especially
13 manufactured. These are fairly generic things that can go
14 on to probes.

15 We also looked at probes being preferentially
16 located away from dense vegetation that has deep roots.
17 There's only so much we can do about that based on
18 location of probes and the permitted facility foundation
19 boundaries, but it's something to be considered.

20 --o0o--

21 MR. HUFF: We're recommending the development of
22 a standard probe specification or construction detail. As
23 we discussed previously, the regulations currently don't
24 have something like that. It has a very I would say a
25 skeleton of that. It talks about a shallow, a mid depth,

1 and a deep probe. But doesn't necessarily talked about
2 screened interval and other constructions.

3 We're also looking at requiring certification of
4 installed probes post installation. The regulations
5 currently talk about when they're being drilled or
6 installed that they're overseeing. We're looking at
7 making sure that the post-construction logs really match
8 with what was done, because we did find a few probes where
9 that didn't quite match.

10 And finally, this study I did think provided some
11 helpful information. And so we're going to recommend
12 periodic maybe every ten years or so assessment of probes
13 in order to verify their functionality.

14 --o0o--

15 MR. BELL: So thanks, Ray.

16 Staff is in agreement with the SCS
17 recommendations with the addition that probe should be
18 constructed to allow visual access.

19 And are there any questions from the Board at
20 this point?

21 CHAIRPERSON BROWN: Any questions?

22 We do have one speaker. Do you want to do the
23 speaker first? We have one speaker, so let's do that and
24 then we can go to questions. That would be Glenn Acosta.

25 MR. ACOSTA: Good morning, Madam Chair, Committee

1 members, and our new technical advisor, Katie.

2 I'd like to start off by commending staff on the
3 study. I think the report raises a couple of valid
4 points. First is there should be statewide consistency
5 and design. And secondly, there is a need to have
6 periodic checks of functionality. So I think those are
7 two valid points.

8 And in looking at the staff report, staff is
9 recommending to incorporate these new design requirements
10 into the gas regs. And the only concern that we have
11 there is an operator could be installing a probe today and
12 two years from now that probe design may be non-compliant.
13 So it doesn't make sense to put something in now and then
14 having to replace it later. It's very costly. So as you
15 consider going for a new round of regulations, we just ask
16 that you keep that in mind. Thank you very much.

17 CHAIRPERSON BROWN: Thank you, Glenn.

18 Ted, any thought on --

19 PROGRAM DIRECTOR RAUH: My only observation would
20 be with respect to try to -- I don't think we would be
21 suggesting to make these retroactive. I think we'd be
22 looking those wells that are being installed on a
23 going-forward basis would be those that would be
24 applicable to any regulation and also perhaps those that
25 are being rehabbed or modified as a result of finding

1 they're functionally not working anymore. Perhaps those
2 also might apply to any regulation that the Board might
3 adopt.

4 CHAIRPERSON BROWN: And the specific comment
5 relative to new regs coming out on gas monitoring in the
6 next couple of years.

7 PROGRAM DIRECTOR RAUH: Well, we're not proposing
8 any new regs other than these. That would be something
9 that if the Board directed the staff to do something,
10 we're just suggesting that the logical place to put the
11 well standard would be with the other regulations that
12 you've already promulgated.

13 CHAIRPERSON BROWN: Any questions from anybody?
14 Cheryl.

15 COMMITTEE MEMBER PEACE: I just had a question.
16 I think that Ray mentioned that the probes in the study
17 were 10 to 20 years old. But in the item it says
18 something about the average age was under 5 to 25 years.

19 I was just wondering when you did the study, did
20 the study show any relationship in age to non-function and
21 how they functioned?

22 MR. HUFF: Generally not. What we found -- and
23 there's some speculation here. But I noticed as we're
24 looking at the data that it depended on the general
25 activity and sometimes the environments of the site. For

1 instance, a site in a wet area that has a lot more water,
2 possibly perched water, you're going to get a lot more
3 fluctuation and a greater chance for life to be inside of
4 a probe versus a probe in a more arid or desert
5 environment where you have gravels and cobbles and not a
6 lot of activity. So we didn't find a direct correlation
7 between age and functionality.

8 MR. BELL: Some of the things we saw related to
9 ages were roots that had come through the screens, joints
10 that had failed and started to leak, Bentonite coming
11 through, or you can see signs of algae growth where water
12 had come through, things like that. But not a major
13 issue. We weren't sure what we would find, so that came
14 out that way.

15 COMMITTEE MEMBER PEACE: You're saying this is
16 not an enforcement item and the revisions to the
17 regulations that you're suggesting today are not
18 retroactive. But on the seventh one, it says you're going
19 to require periodic functionality assessments. Does that
20 mean they have to go check their probes on the old and the
21 closed landfills and the new ones and correct them if they
22 find something wrong?

23 MR. BELL: Well, the regulations of course have
24 to be written over a period of time and though given to
25 how these things are done. The idea wouldn't be to be

1 retroactive to things that were already put in, but to
2 look to future construction as a guide for that.

3 COMMITTEE MEMBER PEACE: I understand in terms of
4 construction if you go back and started looking at the
5 landfills -- like here it says to look at them every
6 ten years. So if they find something like the ones that
7 we saw today that were in the study that were not
8 functioning, is there any requirement that they make them
9 functional?

10 MR. BELL: Well, yes. That would stand to reason
11 that if a monitoring point -- some of these are 1,000 feet
12 apart. So if you have a non-functional well, you have
13 2,000 feet or 1,000 feet of area certainly that's
14 unmonitored where the public or off site land could be
15 exposed.

16 So, yes, what's found should be collected. The
17 idea of periodic checking could be 10 years or 15 years.
18 It has to be decided. But it would be a way of checking.

19 However, it's my feeling that if the probe is put
20 in correctly to begin with, it will last a long time
21 before the effects of any problem would show up. A lot of
22 the problems we saw were from problems with additional
23 construction or knowing that the ground water was high and
24 putting the probes in anyway and things like that.

25 CHAIRPERSON BROWN: But let me clarify, John,

1 because I don't think you're specifically answering
2 Cheryl's question.

3 What was stipulated is that these new regs would
4 be for installation of new probes. So the functionality
5 assessment every ten years or whatever gets promulgated
6 would be for those new probes that are installed, not the
7 ones that are in the item or that are already installed.
8 You're not suggesting that we go back and require that all
9 these probes be replaced.

10 BRANCH MANAGER DE BIE: If I can step in. Mark
11 de Bie with Waste Compliance Mitigation Program.

12 Typically with regulations when we start, we do
13 an informal process where we scope out and we sort of lay
14 out the questions that need to be answered in that
15 regulatory process. So certainly the retroactive aspect
16 will be discussed.

17 It's clear to staff right now that we don't want
18 to go back and have everyone replace all the wells that
19 they already have in place based on some new standards
20 that we developed.

21 The question about whether or not a well, whether
22 it's existing or new, is determined to be non-functional,
23 the functionality aspect has to be defined so that we're
24 discussing the same parameters. So we need to go through
25 a scoping process and figure out what we mean by

1 functionality.

2 I think what John was sharing is if we get to a
3 place sometime in the future that it's clear a well is not
4 functioning the way it needs to, it's not providing data
5 on the gases in the soil, something needs to be done
6 relative to that. It could be repairing it. It could be
7 replacing it. And if it's replaced, it would need to meet
8 the current standards there.

9 But we will have a base line to have that
10 discussion about what's happening down inside the ground,
11 which we don't have right now. We don't have common
12 understanding about how to evaluate a well relative to how
13 well its performing. So that would be part of the scoping
14 to go through that to talk about how we measure whether
15 these wells are adequate, whether they're very old or
16 newly constructed.

17 CHAIRPERSON BROWN: Thank you.

18 BRANCH MANAGER DE BIE: And John does have a
19 couple of immediate follow-up steps that we wanted to
20 share with the Board, too. So at some point we would want
21 to come back to John.

22 COMMITTEE MEMBER PEACE: But in terms of the
23 study, the probes that we found that were not functioning,
24 because this isn't enforcement item, is there anything
25 that says that they need to correct the ones that weren't

1 functioning?

2 MR. BELL: Well, if a site operator has a
3 compliance probe they learn is not functioning, they
4 should probably begin to take steps to make it functional.

5 COMMITTEE MEMBER PEACE: But some of these were
6 on closed landfills.

7 PROGRAM DIRECTOR RAUH: I might add that this
8 information has been shared with each LEA. As John
9 indicated, some LEAs were actually out on site when the
10 evaluation was done.

11 But one of the things as a follow-up we have
12 already begun is to extensively communicate with LEAs in
13 general results of these studies. And as I indicated
14 specifically, those where there is a functionality issue,
15 that information had already been provided directly to the
16 LEA to follow up on as part of its monitoring program, the
17 monitoring responsibility. And in turn as has been
18 indicated, the operators were provided this information
19 and with every expectation they would take immediate
20 action where there was a problem associated with their
21 ability to understand what gas migration might be
22 happening at their site.

23 So, yes, all the steps I think should be taken to
24 provide the scientific information so the regulated
25 community and our partners, the LEAs, have taken already,

1 and we'll continue to be discussions with them on it.

2 BRANCH MANAGER DE BIE: If I could add to what
3 Ray indicated, some of the issues relative to these probes
4 were corrected immediately once it was shared with them.
5 So things like replacing stoppers with valves was an easy
6 fix to do on many of these.

7 So, yeah, the number looks big, 32 percent. But
8 some of them were very quick fixes and instantly became
9 functional.

10 And then the follow-up with specifically what Ted
11 was saying is, you know, we're already seeing dialogues
12 occurring between LEAs and operators relative to specific
13 probes that were identified at these sites on determining
14 what needs to be done, if anything, to bring them into
15 greater assurance that they are working the way they need
16 to and avoiding functionality because it needs to be
17 looked at and figured out.

18 But, you know, there's some doubt about these
19 wells and whether they're getting good readings. And so
20 there is a dialogue going on with the parties concerned to
21 figure out what they need to do to get greater assurance
22 that these things are working the way they need to be.

23 COMMITTEE MEMBER PEACE: When do the LEAs do the
24 monthly inspections, are they required to check so many
25 probes as part of their inspections?

1 BRANCH MANAGER DE BIE: Did you say LEA?

2 COMMITTEE MEMBER PEACE: Yeah.

3 BRANCH MANAGER DE BIE: LEAs are encouraged
4 through our training and guidance to do regular
5 monitoring, not entirely rely on the operator or the
6 operator's consultant. How they approach that can vary.
7 Some of them with small sites with a small number of wells
8 may attempt to monitor all of them on a regular basis.
9 Monthly is a little overkill.

10 With some of those with a number of wells may do
11 a sample of periodically. Some focus on wells that have
12 known issues with them to verify results. So there isn't
13 a set methodology that LEAs follow. Sites are different.
14 There are different parameters to take into account.

15 But through our training and guidance, you know,
16 LEAs are provided the tools and methodologies to do
17 independent monitoring and encouraged to utilize those as
18 effectively as they can.

19 COMMITTEE MEMBER PEACE: Also in the item it says
20 wells deteriorate over time, and many landfills will
21 continue to produce migrating gas for 50 years or more
22 from the present.

23 Where did the information come from, that 50
24 years?

25 MR. BELL: Well, there's no absolute data on

1 that. I took that out of Land Tech, their own -- they
2 have a study on design of landfill gas control and
3 monitoring systems. They use 50 years. Some text books
4 go out to 100 years.

5 In California, we use a dry tomb technique of
6 landfilling. And you can dig up waste that's 30, 40 years
7 old, and the paper and things have hardly deteriorated.
8 Yet, it's still producing enough landfill gas to cause a
9 problem. So these things as water gets to them and the
10 wood breaks down, it can take as much as 100 years in some
11 cases depending on the stage of the landfill gas.

12 The last two stages could be 40 years and 40
13 years. So 50 is a probably downplaying a little bit for
14 some of the landfills. There's no absolute answer.

15 BRANCH MANAGER DE BIE: I could add certainly
16 technologies are shifting. John described two the dry
17 tomb methodology, bioreactors. One of the benefits of the
18 bioreactor is that you have more rapid decomposition of
19 waste. So it should be much shorter than 50 years or 30
20 years. So as technologies develop, you know, those
21 numbers will shift around.

22 But certainly a very dry landfill could
23 potentially be producing, as John indicated, landfill gas
24 for hundreds of years.

25 COMMITTEE MEMBER PEACE: Thank you.

1 COMMITTEE MEMBER PETERSEN: I have a question.

2 Ray, in the areas around the wells you tested --
3 I mean, you tested the probes, did you find any gas
4 migration outside the footprint of that well and when you
5 were doing your evaluation?

6 MR. HUFF: As far as surface emissions are
7 concerned?

8 COMMITTEE MEMBER PETERSEN: Right.

9 MR. HUFF: Generally, we did not. As I said, we
10 found a couple of points where there were valves that had
11 been left open on probes. So we were venting and we
12 picked up gases.

13 But generally, the methane that we found was in
14 the PPM range and definitely less than five percent of the
15 lower explosive limit. So extremely low if present at
16 all.

17 COMMITTEE MEMBER PETERSEN: And that was directly
18 associated with that specific well. How far out did you
19 measure that?

20 MR. HUFF: We went for five to ten foot radius
21 out from each well head looking at the ground. We were
22 primarily evaluating the seal of the well bore. What
23 we're looking to determine was whether or not gases were
24 migrating up.

25 COMMITTEE MEMBER PETERSEN: Thank you.

1 CHAIRPERSON BROWN: Rosalie.

2 BOARD MEMBER MULÉ: Thank you, Madam Chair.

3 I just want to thank SCS for this study and John
4 Bell for your persistence in moving this whole effort
5 forward.

6 And I do support Option 1. I just want to put
7 that on the record and start the informal rule making
8 process.

9 I support having some kind of a standardized
10 design for these wells. And like Glenn Acosta had
11 mentioned, the idea of having periodic checks I think was
12 very helpful. Thank you.

13 COMMITTEE MEMBER PEACE: I just have to say I
14 agree with Board Member Mulé. And my only concern is that
15 you're saying you're going to have a ten-year term for
16 checking. I think ten years might be too much, but that
17 will be something you'll discuss --

18 MR. BELL: That's open for discussion.

19 CHAIRPERSON BROWN: John, do you have any final
20 comments?

21 MR. BELL: Just a few final comments.

22 We plan on initially in the short term to provide
23 more landfill gas training to the LEAs and operators,
24 especially on the new standards and to consider evaluating
25 your probes, how to do that. And also assisting LEAs and

1 operators on functionality issues.

2 So other than that, in conclusion, we recommend
3 adoption of Option 1.

4 CHAIRPERSON BROWN: Again, I think I'll echo
5 Member Mulé. John, thank you very much. Ray, great
6 study. Something that's not been done anywhere else and
7 has not been pursued. So applaud your efforts and for at
8 least opening the door to looking at something that nobody
9 has looked at yet. I think we generally assume that
10 probes are working, but we shouldn't assume anything these
11 days. So very, very interesting.

12 And with that --

13 PROGRAM DIRECTOR RAUH: Madam Chair, if I can
14 make one more comment. I think this is a great example of
15 the Board's direction to use science in our pursuit of
16 areas where regulation may be appropriate or not. And we
17 certainly thank you for providing leadership and allowing
18 the staff to proceed with this important effort.

19 CHAIRPERSON BROWN: Thank you. Point well taken.
20 Science, a basis for all good regulations.

21 With that, do I have a motion? Do we need a
22 motion?

23 CHIEF COUNSEL BLOCK: Yeah, this is just a
24 direction item.

25 CHAIRPERSON BROWN: We'd like to direct the staff

1 to initiate an informal rulemaking process to modify the
2 existing disposal site gas monitoring and control
3 regulation CCR 52720925 to provide additional requirements
4 for landfill gas monitoring probe design, construction,
5 and periodic functionality assessment, and to work
6 collaboratively with the stakeholders to develop those
7 standards.

8 So great job. Ray, thank you very much. John,
9 thank you very much. Okay.

10 I guess that takes us next to Board Item 14,
11 Committee Item D, Discussion and Request for Additional
12 Direction on Long-Term Postclosure Maintenance and
13 Corrective Action Financial Assurance for Landfills.

14 PROGRAM DIRECTOR RAUH: Thank you, Chair Brown.
15 I'll start with a quick introduction.

16 Staff is before you today continuing the
17 discussion regarding the proposed Phase 2 rulemaking
18 effort necessitated by legislative direction from AB 2296.
19 This legislation in part calls for the Board to conduct a
20 study of landfill financial assurance needs for
21 postclosure costs, promulgate regulations the Board feels
22 necessary to carry out findings from the study, and
23 recommend possible legislative initiatives to address any
24 issues that cannot be dealt with through the Board's
25 current authority.

1 During the June Policy Committing meeting, staff
2 set the context for this item. At it's June 18th meeting,
3 the Board reviewed three lists of issues that were grouped
4 based on staff's understanding of general stakeholder
5 agreement. The Board directed staff to move forward with
6 stakeholders to develop draft regulatory language to
7 address issues listed in Group A and B and continue to
8 work with stakeholders on the Group C list.

9 Staff held an additional workshop with
10 stakeholders on regulatory concepts for Group A and B
11 issues and recently provided draft regulatory language for
12 stakeholder review and comment. Staff will be meeting
13 with stakeholders at a workshop scheduled for July 17th to
14 go over that draft language.

15 Staff will also provide a summary of Group A and
16 B issues today, but does not intend to discuss the draft
17 regulatory language until more stakeholder input is
18 received. Staff intends to bring the language to the
19 Board as its August meeting.

20 Group C issues were discussed conceptually at the
21 June 18th Board meeting and workshop, and stakeholders
22 requested that staff develop three options for further
23 discussion: One based on individual financial assurance
24 only, a pooled fund only, and a combination of both
25 concepts. These options will be discussed today.

1 The principle issues before the Board today are
2 the Group C issues and considering the extension of
3 financial assurance the Board is addressing, how much risk
4 should the State avoid from potential landfill
5 operator/landowner defaults and post 30 year divestitures,
6 what risk can and should be managed, and what are the
7 system costs associated with avoidable and non-avoidable
8 risks.

9 Staff has presented its estimates of long-term
10 PCM costs at previous briefings and has refined these
11 costs based on its own be continued study and stakeholder
12 input.

13 Our current cost estimates and model refinements
14 are used in the following presentation of risks converted
15 to system costs and the scenario staff will present.

16 We understand industry representatives will
17 present additional cost information to you today. Staff
18 expects to discuss the new industry cost data as part of
19 the July 17 workshop scheduled for this week. Staff
20 analysis indicates that all risk cannot be avoided and
21 that depending on the financial assurance approach the
22 Board may take, one can expect different effects on
23 landfill operators.

24 Staff's presentation will attempt to display some
25 of these impacts. Bill Orr will be making today's

1 presentation. And as in the past, Bill has led an
2 excellent staff team consisting of Richard Castle, Bernie
3 Vlach, Garth Adams, Mike Wochnich, and Shelly Bromberg,
4 Andy Marino, Jonalyn Bajurin, and Elizabeth Castañeda to
5 prepare the information you will receive today and of
6 course, with the able assistance of stakeholders who have
7 been advising us all through this process.

8 With that, I'd like to ask Bill to take over.

9 (Thereupon an overhead presentation was
10 presented as follows.)

11 DIVISION CHIEF ORR: Thank you, Ted. Good
12 morning, Chairwoman Brown and Committee members.

13 --oOo--

14 DIVISION CHIEF ORR: I'm pleased to be back here
15 today with a much shorter presentation than last month,
16 although it really is a continuation of that discussion
17 with additional staff analysis and stakeholder input.

18 Picking up where we left off last month, the
19 groupings that we came up with, staff has subsequently
20 shared draft language with the stakeholders and will bring
21 back revised language on the Group A items. The one item
22 I wanted to highlight here is based on stakeholder
23 feedback, staff has suggested increasing the time frame
24 allowed for submitting the closure certification report to
25 180 days instead of 90 days.

1 --o0o--

2 DIVISION CHIEF ORR: On the Group B items, staff
3 is also shared the initial draft language with
4 stakeholders. We'll discuss that on Thursday.

5 And then I wanted to highlight a couple of the
6 points that were discussed.

7 In regard to the reasonable postclosure
8 maintenance contingency and grandfather of closed sites,
9 for both of those items, it was discussed really that
10 depends on which long-term financial option the Board
11 selects. So additional discussion of that was really
12 deferred until after this meeting and the workshop coming
13 up on Thursday.

14 We will talk a little bit more on the non-water
15 corrective action financial assurance, closure cost
16 estimate dialogue, and the reductions in future costs.

17 --o0o--

18 DIVISION CHIEF ORR: As I mentioned, specifically
19 for the reasonable contingency, staff is looking at a
20 proposal of ten percent and has suggested regulatory
21 language to reflect that. However, whether or not that
22 it's pursued depends on the options. And I'll be looking
23 at that as part of each of the four options we'll be
24 presenting this morning. In addition, how it would be
25 grandfathered is also dictated by that option.

1 --o0o--

2 DIVISION CHIEF ORR: In regard to the non-water
3 quality corrective action, probably this item is the one
4 where we had the biggest break through in terms of our
5 last staff work staff. As we've been discussing with the
6 Board for some time, we believe in most instances the
7 water quality corrective action would be the most
8 expensive one. And stakeholders said, well, if that's the
9 case, why don't we simplify the whole process and not
10 require an additional corrective action plan for those
11 other types. Simply piggy-back on the cost estimate for
12 water quality and use that amount for the other items that
13 might come up. So staff has developed some draft language
14 to reflect that.

15 The other points that came up during the
16 discussion was if we're going to be using this corrective
17 action assurance for more than just water quality, there
18 may be more frequent use of those funds. Therefore, it's
19 important to develop a schedule for the repayment of those
20 funds over time.

21 It's also important to consider the ability of a
22 particular operator to repay those funds before you
23 release them, because they would be difficult to get back
24 in the future.

25 And stakeholders also suggested that additional

1 guidance could be used by them in meeting the current
2 requirements.

3 --o0o--

4 DIVISION CHIEF ORR: In regard to the cost
5 estimating dialogue, we have through a whole series of
6 workshops addressed the issues of operating versus closing
7 costs. Probably the last item that was out there is
8 whether or not the Board would be looking to enforce the
9 air criteria dealing with landfill gas control systems
10 that are essentially required by air districts. And
11 basically what the current position is that staff, the
12 Board would not be responsible for implementing the air
13 district requirements. We would be focusing our review on
14 the lateral migration issues.

15 --o0o--

16 DIVISION CHIEF ORR: And that brings us into the
17 Group C items. The direction from the Board was to
18 further explore these concepts with the group, bring it
19 back here today and next week for further direction.

20 We considered some additional proposals, namely
21 ones that dealt with the use of a contingency fund or a
22 five-year rolling option that was presented by both the
23 L.A. Sanitation Districts and Orange County. We talked
24 about a variety of ways to extends postclosure maintenance
25 beyond 30 years, whether it be through individual

1 financial assurance demonstrations or the use of a pooled
2 fund, and then how much money would be required. And
3 that's what we'll be looking at in more detail in a few
4 minutes.

5 --o0o--

6 DIVISION CHIEF ORR: In terms of how to extend it
7 and how much is enough, some of those risks can be avoided
8 by which mechanism you select and how you implement it.

9 Other risks can be managed, but some of them are
10 actually going to be unavoidable, in a sense water under
11 the bridge, regardless of which of these financial
12 assurance options that the Board would consider today.

13 --o0o--

14 DIVISION CHIEF ORR: In terms of those different
15 categories, based on additional staff analysis, we've
16 refined the working model and the scenarios that we've
17 been undertaking to assess the long-term landfill
18 postclosure maintenance cost, basically the system's cost
19 that Ted was alluding to a few minutes ago. As we've
20 alluded to in the past, we've identified a couple of areas
21 that really drive those costs. There are some standard
22 owner defaults that, regardless of which option if you
23 have financial assurances, some of them occasionally are
24 going to fail. I mean, we've been hearing this week about
25 banks failing as a result of the mortgage situation.

1 Businesses just fail over time for various reasons.

2 But in addition to that, we've identified other
3 types of defaults which may be promulgated by divestiture
4 of landfills and that kind of thing. We'll be looking at
5 that in more detail.

6 The last two bullets here are items having to do
7 with how do we get out of the cycle of long-term financial
8 assurance for landfills. Last month, the Board approved a
9 contract concept to look at various technologies and
10 practices to minimize the postclosure maintenance costs
11 over time. And that would look at either future changes
12 in landfill design to reduce how long a landfill poses a
13 threat or it could be looking at the existing or changes
14 to the operations and the design of existing or closed
15 landfills and trying to mine or go back and look at those
16 resources in ways to eliminate or minimize those costs.
17 It's really I think important as we look at those costs to
18 keep in mind the big picture on how do we look at the
19 overall system going forward.

20 --o0o--

21 DIVISION CHIEF ORR: So in terms of just a quick
22 review of what we've learned about those postclosure
23 maintenance costs, based on our experience of 15 years in
24 our program so far, we don't see any significant
25 reductions in postclosure maintenance costs.

1 Industry and other entities have developed a
2 protocol for monitoring long-term postclosure maintenance,
3 the ITRC protocol. That hasn't been validated in terms of
4 long-term cost information. Stakeholders may have some
5 additional information that they want to share with us on
6 that today.

7 As we've mentioned previously, we've polled other
8 states, our counterparts around the country. And
9 basically the response we've gotten on whether or not
10 postclosure maintenance reduces over time is the data is
11 too early to tell. The data is inconclusive. However,
12 we're currently engaged with stakeholders to get
13 additional information on postclosure maintenance costs,
14 and we expect to be receiving information on that from
15 operators by the end of July.

16 In addition, we've done some additional modeling
17 of sensitivities of the various scenarios. We've also
18 looked at what if postclosure maintenance costs do go
19 down. And we basically found that if there is an annual
20 cost reduction of about a half a percent per year, that
21 basically reaches equilibrium for the overall system and
22 can actually reduce the system's cost by 20 percent. But
23 we don't know whether there's a real number or not.
24 That's basically saying if costs go down by that amount,
25 basically the system comes into equilibrium.

1 --o0o--

2 DIVISION CHIEF ORR: In terms of the default
3 types -- and this is really what drives the costs that the
4 exposure to the State and to the rate payers. As I
5 mentioned earlier, there are standard defaults. And that
6 basically is when the landfill operator and a financial
7 institution would both default at the same time -- except
8 in the case where they're using a means test. And in
9 those instances they would basically go out without an
10 additional entity supporting it.

11 In addition to that, we've identified a category
12 that seems more likely to default, the 29 single private
13 landfills. And we've sharpened our pencil and taken a
14 closer look at those single private landfills. And what
15 we found is that 14 of them are already closed. And so
16 trying to impose new requirements for financial assurance
17 on over half of those is going to be very challenging.

18 Six of them are currently operating, but most of
19 those are within ten years of closing.

20 Two of them are permitted but have not accepted
21 any waste. So they are sometime in the future, and you
22 could actually impose some requirements on them.

23 Six of them are corporate or publicly assured and
24 have some other source of revenue. So we don't
25 necessarily think those ones would default based on simply

1 closing and not having another source of revenue.

2 We've also identified a second category of
3 concern, which would be the rural public landfills. While
4 we don't expect that local governments would permanently
5 default, there may be situations where there are temporary
6 defaults. And based on the rural nature of those
7 landfills, they may not have a sufficient tax base or
8 revenue streams to cover certain situations. And there
9 are about 64 of those landfills around the state.

10 The largest factor that we've identified is the
11 potential divestiture where essentially if under the
12 current status quo financial assurances are no longer
13 required after 30 years that there would be an inclination
14 to basically sell the landfills which would occur for most
15 of the privates and possibly a few of the public
16 landfills. And we basically have treated that scenario
17 like a start-up business and have used a default rate of
18 12 percent annually for this analysis.

19 So in terms of some findings that we've made
20 based on this additional analysis, the first is that staff
21 has concluded that a certain level of defaults will occur
22 regardless of the amount of financial assurance that's
23 required and the scenario the Board is to select.

24 The second thing is that the imposition of a 100
25 year scenario or basically increase requirements for a

1 financial assurance will likely precipitate or make worse
2 early defaults by the single private operators. One of
3 the things we looked at was possibly having sort of a dual
4 financial assurance and require these single private
5 landfills to be assurance in perpetuity. The problem is
6 over half of them are closed.

7 And then the last item is that the divestiture,
8 one way of dealing with it is by maintaining financial
9 assurance, but may also be possible to control it by
10 requiring either a financial means test be passed by a
11 prospective buyer prior to the selling of the property,
12 requiring that a buyer provide financial assurance for
13 some period of time, or that owners -- all owners over
14 time be required to maintain responsibility for cost for
15 that landfill, which is something where you couldn't
16 simply sell the liability and absolve yourself of that
17 responsibility.

18 --o0o--

19 DIVISION CHIEF ORR: Now this is translating what
20 we just talked about into a graphical representation.
21 This is looking at a 100-year planning window, which is
22 not to suggest that the postclosure maintenance period is
23 100 years. It's basically to look at the system over a
24 100-year period. What you basically see is the green
25 would be the assured cost over that 100-year period

1 looking at various scenarios. The yellow is the unassured
2 responsibility that the landfill owner would have to
3 maintain the landfill. And then the various shades of
4 orange and red and brown are the various types of defaults
5 that I've just touched on.

6 --oOo--

7 DIVISION CHIEF ORR: Which leads us to this
8 slide, which is really the most important slide in the
9 presentation this morning, which are the numerical
10 representation of what the staff analysis is. If you look
11 at that 100-year planning window according to staff
12 analysis, the system costs for that 100 years would be the
13 top item in the column there, the \$5.5 billion, which
14 represents all of the assured and unassured costs.

15 Now, in terms of the different categories that
16 we've talked about, if you look at the standard defaults,
17 you can see that they're relatively modest. They range
18 from about \$11 million to \$83 million over 100 years.
19 Under any scenario that we've come up with, the rural
20 public situation would in estimate be about \$26 million
21 over 100 years.

22 Then if you move over to the single private
23 column, you'll see that if you impose an additional level
24 of financial assurance, sort of that 100 year scenario, it
25 could precipitate the defaults of those 20 to 22 private

1 landfills that don't have another source of revenue. And
2 we estimate from a policy perspective it would be about
3 \$263 million in that range. That assumes that all of them
4 basically would default that don't have a separate source
5 of revenue.

6 Now if you look at the ten and 15 times options,
7 those costs are really much reduced from that, and then
8 they basically build up with a five times multiplier. And
9 then under the status quo, it's zero. But that doesn't
10 mean that that doesn't happen. What it basically means is
11 it blends in with the other private Divestitures in the
12 column to the right.

13 And then if you look at the divestiture issue,
14 basically that doesn't really come into play, staff
15 believes, until a financial assurance level would be
16 reduced below about the 15 times multiplier. So if you
17 look at the 5X and the status quo option, it ranges from
18 on the order of 600 million to about \$800 million over
19 that 100-year period.

20 So this is really what we use to develop the --
21 we expanded the options from three option to four options.
22 One of them, financial assurance only. One of them,
23 combination -- well, actually a couple of -- one
24 combination and two where you would be relying solely on a
25 pooled fund beyond 30 years.

1

2 DIVISION CHIEF ORR: So let's take a look at
3 those.

4 Under Option 1, staff, using the numbers we just
5 looked at, if you use something on the order of rolling 30
6 or a step down or draw down rolling 15-year period, it
7 would limit the exposure to the state to on the order of
8 96 to \$170 million over 100 years.

9 It would minimize the divestiture defaults that
10 we talked about earlier. And we would staff would only
11 suggest the inclusion of a postclosure maintenance
12 contingency if the Board were to direct a draw down
13 approach or something less than 15 years in terms of the
14 multiplier.

15 --o0o--

DIVISION CHIEF ORR: Looking at the second option, it would be a combination of the individual financial assurances with a pooled fund. Again, based on minimizing the exposure to the State, but reaching a balance in terms of the individual financial assurance, staff would suggest looking at a step down approach which would reward the good actors. Possibly a draw down rolling 15 year approach.

24 In this instance, the biggest difference is that
25 a pooled fund would be available for a backstop for those

1 defaults that we've described. The exposure to the State
2 would be covered by the fund. Under the previous option,
3 that exposure is not addressed. And so it's a matter of
4 whether or not that's an acceptable level of risk over a
5 100-year period.

6 It would include the various defaults or address
7 those, the standard defaults, the single privates, the
8 rural publics, and would also minimize the divestiture
9 default. With this option, staff would not suggest a
10 postclosure maintenance contingency be pursued.

11 --o0o--

12 DIVISION CHIEF ORR: The third option is
13 basically relying primarily on a pooled fund as a backup
14 to the regular owner responsibility to do the right thing
15 and continue to maintain the landfill. The exposure to
16 the State would largely be as a result of the divestiture
17 concern that I articulated earlier. About 90 percent of
18 the concern related to the defaults would be related to
19 private sites. About ten percent of that would be the
20 temporary defaults that we talked about earlier. This
21 would address standard defaults, private defaults, rural
22 publics. And then the divestitures would be covered by
23 the size of the fund.

24 The biggest difference between this option and
25 the previous one is the potential size of the actual

1 pooled fund. In the case of Option 2, the size of the
2 pooled fund might be 15 cents a ton, whereas this one
3 might require something on the order of 50 cents a ton.

4 And again with this option, staff would not
5 suggest pursuing a postclosure maintenance contingency.

6 --o0o--

7 DIVISION CHIEF ORR: And this leads us to the
8 fourth option. This basically is a pooled fund where
9 instead of keeping or addressing the divestiture issue
10 through either paying for it through the pooled fund that
11 you would attempt to address it through other legal means.
12 That could include assessing the site history. As I
13 mentioned earlier, the imposition of a financial test or
14 appropriate financial assurances by the buyer prior to
15 sale. This would moderate the exposure to the State.
16 We're not quite sure where it would be, but it would be
17 somewhere between the \$170 million and the 896, which is
18 the basically the divestiture concern. And that would
19 depend on how effective the means you implemented were on
20 managing that divestiture issue.

21 It would address the other types of default, the
22 standard defaults, the single privates, and the rural
23 ones. And again under this option, there would be no
24 postclosure maintenance contingency suggested.

25 In regard to the pooled fund, whether it's this

1 one or the previous couple of options, that could be
2 either a new pool or possibly an expansion of the Board's
3 current corrective action or closure trust fund. There
4 are a number of protections already built in place in
5 terms of cost recovery, in terms of procedures for
6 prioritizing and things like that. So depending on which
7 of these options makes the most sense, that could be
8 pursued further based on that.

9 --o0o--

10 DIVISION CHIEF ORR: In terms of the next steps,
11 we're making the presentation today. We expect there will
12 be some stakeholder comments this morning. But basically
13 we're going to be using this presentation as the basis for
14 the discussion of the Group C options on Thursday.

15 And what we would propose like last month -- if
16 you have any questions, we'd be happy to answer them now.
17 But we will be bringing back an update to you next week to
18 update you on how the workshop went and then seeking your
19 direction at that time in terms of the Group C options.

20 Then we plan on coming back to you in August with
21 a request to start the formal rulemaking process based on
22 that direction.

23 That concludes my presentation. And I would be
24 happy to answer any questions with the able assistance of
25 Bernie and Richard.

1 CHAIRPERSON BROWN: Thank you, Bill, for your
2 presentation. We do have a speaker or two. First one is
3 Glenn Acosta.

4 Mr. ACOSTA: Hello, again, Madam Chair and
5 Committee members. Glenn Acosta with the Sanitation
6 Districts of Los Angeles County.

7 If I could ask staff to turn to one of the
8 slides. I think it's slide 14 that talks about managing
9 the long term PCM risk of landfill system. It's the one
10 with the table that shows all the columns including the
11 divestitures. That one.

12 I'd like to make one point on this slide. We
13 believe that divestitures can be handled separately by
14 setting up stringent criteria for acquisitions. So in
15 doing so, you can essentially take the divestitures number
16 off this table. And when you do that, the risk associated
17 with the five-year multiplier and the 15 year multiplier
18 are about the same.

19 So it doesn't make sense if you have the same
20 risk to require operators to put up three times the money.
21 Because if you look in the right column, you have a risk
22 of 170 million. If you remove divestitures by handling
23 that separately, the number is about 200 million. So we
24 believe that a five-year multiplier, a rolling five-year
25 demonstration is equal in risk to the 15 year multiplier.

1 The second point I'd like to make is we'd like to
2 recommend to move the contingency to Group C, because it
3 doesn't make sense to insert it in the regulations now
4 since it's contingent upon what options the Board chooses.
5 So I would just move that to Group C and handle that as
6 one package.

7 Thank you very much.

8 CHAIRPERSON BROWN: Thank you, Glenn. Bill.

9 DIVISION CHIEF ORR: I would just want to point
10 out in the regard to the postclosure maintenance
11 contingency, the draft regs that we distributed to
12 stakeholders has a very clear note right on that provision
13 that while we were able to develop language that whether
14 or not that would be included would depend on the
15 direction that we receive from the Board on which options
16 to pursue. So that would be fine. Clearly, we can't
17 proceed with that one until we receive direction from the
18 Board in terms of which option to pursue.

19 CHAIRPERSON BROWN: So it's still being
20 considered anyway.

21 Our next speaker is Chuck White.

22 MR. WHITE: Thank you, Madam Chair, members of
23 the Board. Chuck White with Waste Management.

24 I would like to agree with Mr. Acosta on his
25 comments and further elaborate that a lot of these numbers

1 you're seeing we believe are quite inflated. And an
2 example is that a divestiture issue and the cost
3 associated with remediating divestitures that can be
4 easily handled, as Glenn suggested, by just making sure
5 the Board has regulations that requires prior approval
6 before a landfill is divested to a new owner. And you
7 have the ability to take a look at the financial assurance
8 that new owner or operator would be able to have for that
9 landfill.

10 And, again, going back -- I mentioned this
11 several times. Subtitle D regulations require there to be
12 financial assurance as long as the director of an approved
13 State believes there is a threat to human health, safety,
14 and the environment. This would continue into the future
15 beyond 30 years as long as the State felt there was a
16 problem. And if it a divestiture were to occur at any
17 point in time, at year 45 or year 50, and there was still
18 a financial assurance requirement imposed upon that
19 landfill through the Subtitle D requirements, just make
20 sure that when that property is divested to the any owner
21 if the State has a chance to review and approve the
22 financial assurance that the new owner is bringing to the
23 table for that facility. And would essentially meet the
24 same requirements as the existing owner has to meet. So
25 we think that problem can be easily solved, and we

1 certainly encourage this to be looked at a little further.

2 The other area -- one other area -- there's
3 several other areas -- but one I wanted to mention to you
4 is that we believe that there has been provided
5 substantial evidence that the risks associated with the
6 long-term care of landfills goes down substantially over
7 time. And we believe there is some information available
8 out there on decreasing and declining costs over time as a
9 result of postclosure care of landfills.

10 I have just a couple of examples. The literature
11 is full of information that the leachate quality generated
12 in landfills goes down as the landfill stabilizes over
13 time. Landfill gas generation rates go down over time.

14 I admit the information on cost is less robust as
15 opposed to the information that exists. But somehow we
16 have not been able to successfully communicate what
17 information does exist out there with respect to declining
18 costs. We had talked about doing that before the Board
19 today. We thought we would just try to one more time have
20 a conversation this Thursday with the staff and the
21 workshop to see if we can't see where we had this
22 difference of opinion about the information that's out
23 there relative both to declining risk and declining cost
24 over time, which we think there is certainly sufficient
25 information out there to draw some clear conclusions.

1 So we'll be doing that further on Thursday and
2 we'll be back before you again I guess in a month and
3 continue to talk about this issue. And we do certainly
4 appreciate the time that the staff has put into this in
5 affording us the opportunity to have these ongoing
6 discussions. We're not quite there yet, but we seem to be
7 heading in the right general direction. Thank you.

8 CHAIRPERSON BROWN: Thank you, Chuck.

9 Any questions?

10 We will have an update as to your discussion on
11 Thursday so we can ask questions on Tuesday if you want to
12 hold until we'll after the presentation or --

13 COMMITTEE MEMBER PEACE: I had a question maybe
14 Chuck could answer.

15 When we talk about a pooled fund, I feel strongly
16 that we need a pooled. No matter what we choose, there
17 needs to be a pooled fund. Like they mention the private
18 single landfills, 14 of them are already closed. It's
19 going to hard to extend their financial assurance.

20 Defaults, already three companies come right to
21 mind, Enron, Bear Sterns, Indymac. No matter how strong
22 you think a company is, that doesn't mean they're going to
23 be strong tomorrow. Shit happens.

24 Rural publics with temporary defaults. You know,
25 there's going to be temporary defaults. That's the fact

1 of life of divestitures. We can have regulations for that
2 to reduce it. But there's always going to be some
3 problems when there's divestiture issues. So I feel
4 strongly that we need some sort of a pooled fund. We
5 can't do that. It has to be statutory.

6 There's a Waste Management sponsored bill over in
7 the Legislature 2866. I was just wondering if Chuck could
8 tell us how they came up with that \$50 million fund that
9 would be capped at \$50 million.

10 MR. WHITE: I'm not sure I can point to any
11 magical formula that was used. But I think it's
12 consistent with some of the work that ICF did with respect
13 to generating what would be sufficient to protect the
14 State, given the relatively small percentage of defaults
15 that they felt would be appropriate. I think it was on
16 the order of between five to seven percent or even less
17 than that perhaps that they consider might be at risk for
18 a default over long-term postclosure.

19 We feel strongly that it should be both public
20 and private. And there's been a lot of public landfill
21 operators saying there's not really a problem. And the
22 way that the fund would be set up under 2866 gives the
23 Board a lot of discretion on how you would manage those
24 funds.

25 And, for example, if there were a public agency

1 that had a landfill that was going to retain
2 responsibility, they're not going to -- a particular
3 county or city is not going to go out of operation, but
4 they might have a short-term or even a medium time where
5 they have financial constraints getting money from
6 taxpayer dollars, for example, to cover these costs. This
7 would allow the Board to step in and take over at least in
8 the near term some of those costs that would be incurred
9 at the local level for doing postclosure care.

10 In all cases, we anticipate there would be cost
11 recovery that both public and private would be required to
12 pay back any expenditures and there would be assets
13 associated that the State would potentially have to take
14 over if necessary.

15 But the point is that both public and privates
16 could have reasonable access to these funds. Not through
17 grants or anything. It would be the Board stepping in
18 using your authority to expend these funds to take
19 necessary corrective action or postclosure care as
20 necessary.

21 So, I mean, we haven't tried to set any
22 constraints. In fact, we're open to discussion of
23 anything on this bill to try to make it as amenable to all
24 parties to have it be a workable backstop to make sure if
25 there is a problem, which we think is going to be rare,

1 that there is a backstop mechanism available to step in
2 and take care of these problems.

3 And it's very consistent with the ICF study this
4 Board contracted for. I would say was that really -- we
5 had a good sense of the future. No, it was more good luck
6 than anything else when we first started talking about a
7 \$50 million pooled fund a couple of years ago. But as it
8 turned out, the results of the ICF study seemed to
9 substantiate what we were thinking all along, a reasonable
10 back stop mechanism to provide the State some assurance
11 that we have the assets necessary to step in.

12 COMMITTEE MEMBER PEACE: I think we need that
13 reasonable backstop. I was just wondering how you came up
14 with that 50 million and to cap it and not allow the
15 interest to accrue. I just wonder how --

16 MR. WHITE: I think those things can be worked
17 out. And the idea would be possibly to restart the pooled
18 fund. If it ever were drawn down to the point you
19 couldn't recover the assets that you would be able to
20 restart that pooled fund.

21 COMMITTEE MEMBER PEACE: The Board does have cost
22 recovery capabilities. But we don't hardly ever get much
23 cost recovery. I would think it would be hard to go back
24 to a rural jurisdiction if they defaulted to go back and
25 say, okay, now you owe us \$100 million. I mean, how would

1 they ever pay that back? We're not going to say suspend
2 your fire department and your police department and cut
3 there.

4 MR. WHITE: Those are exactly the reasons why we
5 think a pooled fund ought to apply to both publics and
6 privates. And we're totally open to the idea of being
7 able to restart that fund if the fund ever gets drawn down
8 to the point it can't be replaced. Those are all, you
9 know, part of the concepts that are possible.

10 CHAIRPERSON BROWN: I thought part of the
11 proposal was once it gets to 40, it starts drawing again
12 and goes back up. So there is an ought -- once it gets
13 down to 40 million, if we draw on it, then we would start
14 collecting again. And that would replenish the fund up to
15 50.

16 So the idea -- my understanding is that it's to
17 maintain it at 50 million. And if it ever goes below that
18 to 40 million, it starts moving again.

19 COMMITTEE MEMBER PEACE: That's what the bill
20 says now. I think I would feel more comfortable if it was
21 left up to the Board to decide how much we needed and
22 when. Maybe we only need 50 million today or 30 years
23 from now. But maybe it needs to be a lot more than that
24 100 years from now.

25 MR. WHITE: If more were demonstrated at some

1 point in the future, I'm sure you would have willing
2 participants to discuss that and possibly change.

3 COMMITTEE MEMBER PEACE: I'm concerned you're
4 only including the 282 landfills. You're not including
5 the 1700 landfills that are already closed would be
6 allowed to draw from this pool. I mean, I guess I'm
7 concerned about that also. Because the same people that
8 are paying into this through tipping fees are the same
9 people that could be living next to one of these 1700
10 landfills that are already closed that would benefit from
11 having a gas collection systems or something put into one
12 of these closed landfill.

13 I saw last year or this year where we had to give
14 I think was the City of San Jose, they purchased a
15 landfill 30 years ago, wanted to make a park out of it.
16 Now there's a gas problem. They asked the Board for
17 \$750,000 or something matching grant to fix that.

18 So it seems to me that the pooled fund should
19 also cover all those landfills. Because they all could
20 cause a problem.

21 MR. WHITE: I appreciate your position on that.
22 Our sense was the immediate problem is those landfills
23 operating under postclosure requirements since 1989 -- and
24 that made sense to cut off at that point in time rather
25 than to go back and deal with the problem, which is really

1 the focus of your regulations on a go-forward basis of
2 those landfills that are continuing to operate. And that
3 was our primary focus in suggesting it be structured the
4 way it is.

5 CHAIRPERSON BROWN: And the discussion continues.

6 MR. WHITE: It will continue, I'm sure. And we
7 look forward to it.

8 COMMITTEE MEMBER PEACE: I was going to ask when
9 you talk about things to be based on science, when we say
10 that a landfill operator has to have financial assurances
11 until they can prove the landfill no longer poses a
12 threat, what scientific standards do we use? Do we have
13 scientific standards?

14 MR. WHITE: Your staff made reference to two
15 documents that were out there, the ICF and the ITRC
16 reports that establish a protocol for operators and
17 regulators to use for evaluating the stability of a
18 landfill during its postclosure care. How has the gas
19 gone down? How is the cap being maintained? How is the
20 leachate changing over time? And those models can be used
21 to go back to a landfill every so often, say five years,
22 ten years, and evaluate whether that landfill is becoming
23 stabilized and more protective of human health and the
24 environment over time. And be able to determine does the
25 postclosure care period need to be extended or shortened.

1 And we believe, that as I've mentioned before
2 before this Board, that Subtitle D federal program
3 provides exactly that mechanism. In the director of an
4 approved state determines a landfill needs to maintain
5 postclosure care financial assurance for a longer period
6 of time than regulations, certainly allow that. Likewise,
7 they allow it to be shortened if you're able to
8 demonstrate such as using one of these two models that the
9 landfill no longer poses a significant threat to human
10 health and the environment.

11 Thank you.

12 CHAIRPERSON BROWN: I saw Chuck Helget wandering
13 towards the microphone. No? Just wanted to make sure
14 that you spoke correctly about 2866.

15 Okay. We'll look forward to an updated
16 presentation about your lively discussion on Thursday on
17 Group C, which potentially still includes the issues that
18 Glenn addressed.

19 DIVISION CHIEF ORR: Feel free to sit in. It's
20 noticed. And if you want to hear the updated information
21 on postclosure maintenance cost, we have a time slot from
22 9:45 to 10:15 that will be devoted to that on the agenda.

23 CHAIRPERSON BROWN: Great. Thank you all very
24 much.

25 We have one more brief item. Update on

1 Compliance Rates as they Relate to Strategic Directive 4
2 and 8.

3 (Thereupon an overhead presentation was
4 presented as follows.)

5 PROGRAM DIRECTOR RAUH: Madam Chair Brown, just
6 waiting for the overhead to come up.

7 Just wanted to quickly give a highlight. This
8 item is to provide an update for you on Strategic
9 Directives 4 and 8 basically on the metrics of compliance,
10 how we're doing. It's not to discuss our activities
11 associated with those strategic directives, but rather
12 just a statistical quick update. So we will be quick.

13 First slide here shows --

14 --o0o--

15 PROGRAM DIRECTOR RAUH: -- the positive trends
16 that we are seeing with respect to landfill compliance.
17 And as you look at the slide, you'll see those -- one of
18 the indicators was the number of landfills that are
19 listed. And that number has declined from 9 to 5. And at
20 the same time, active enforcement orders have dropped from
21 13 to 8. So we are seeing improved efforts by our
22 partners, the LEA community, as well as ourselves and
23 obviously the regulated community. And moving in a
24 positive trends of compliance.

25 --o0o--

1 PROGRAM DIRECTOR RAUH: If we look at the next
2 slide, we're moving over to the situation of final plans,
3 the approval of final plans. And while the statistic is
4 juggled across the top there, it started at 95 percent,
5 it's hovering at 92 right now. That is not an indication
6 of any lack of effort. It just indicates that we have
7 plans that are submitted to us. We've gotten more in.
8 We're moving some out. So it's kind of a flow.

9 And one of the things that we'll be coming back
10 to you on in December in our report on the annual
11 performance will be to suggest perhaps different ways to
12 capture this information so it gives you a better picture
13 of what's happening with respect to closure plans.

14 COMMITTEE MEMBER CHESBRO: Can I ask you a
15 question?

16 PROGRAM DIRECTOR RAUH: Yes, sir.

17 COMMITTEE MEMBER CHESBRO: Because a particular
18 landfill in a particular county has come to my attention.
19 To what extent are not approving the closure plans
20 dependant on Water Board approval? How much of it is in
21 our corner? Are we awaiting other agency approval that we
22 don't have any -- obviously any direct control over?

23 DIVISION CHIEF ORR: In order for our final
24 closure plan to be approved, it must be approved by all
25 three of the required agencies, which includes the Board,

1 the local enforcement agency, and the Regional Board.

2 There are a number of landfills where the LEA
3 and/or the Board have approved them and the Regional Board
4 has not approved them. I don't have a specific breakdown
5 on that. A number of the ones where that's the case are
6 ones where the landfills were prematurely closed as a
7 result of the water quality issues. So in a lot of
8 instances the Regional Water Board wants to make sure that
9 those water quality issues are addressed fully in the
10 approval of the final closure plan.

11 COMMITTEE MEMBER CHESBRO: I guess the reason I
12 asked the question was to point out that we have certain
13 amount of control over our own fate with regards to these
14 strategic directives. But there's other factors at work
15 that we don't have direct control over. So it's not
16 necessarily just a question of whether staff or the LEA or
17 the owner/operator is doing their job. It's other hurdles
18 besides ours.

19 DIVISION CHIEF ORR: That's correct.

20 CHAIRPERSON BROWN: Is this slide we're looking
21 at reflective of just your work, not any of the LEA or
22 regional water boards?

23 DIVISION CHIEF ORR: This actually represents the
24 approval by all the three agencies.

25 CHAIRPERSON BROWN: So -- okay.

1 DIVISION CHIEF ORR: In some instances, where
2 it's been particularly critical, we may issue a letter
3 where we've completed our technical review and have found
4 them adequate with our standards.

5 An example of that is that we actually -- it's
6 not a final plan. But an example of that would be the
7 Sunshine Canyon Landfill where we sent a letter to the
8 operator on July 1st indicating that we had completed the
9 technical adequacy review in accordance with our
10 standards. But we're still -- the review of the Water
11 Board is still pending. So that would be an example of
12 where we've done that. But that's not our usual business
13 practice.

14 CHAIRPERSON BROWN: So is the five closures part
15 of the 141 final plans approved? Are these sequential so
16 there's ten final plans are submitted under review; 141
17 plans approved by us, but not all three agencies; and five
18 have issued certificates accepted, is that --

19 DIVISION CHIEF ORR: Mike is clarifying the ones
20 where the final plans are approved, he's indicating the
21 ones where we've completed the technical adequacy by the
22 Board staff, those numbers are in fact included in the
23 141.

24 What basically the ten plans submitted, depending
25 on how much life of a particular landfill has left, it's

1 required to submit its final plan within two years. So
2 usually between five and two years of when it's planning
3 on accepting its final receipt of waste, it would submit
4 its final closure plan. So we've received ten of those.
5 And then that's the current status on the number of plans.

6 And the third bullet is actually ones that have
7 completed the implementation of closure. And since the
8 last time we reported, we've actually had five closure
9 certifications on the completion of closure. So that's
10 what that overall breakdown reflects.

11 CHAIRPERSON BROWN: Okay.

12 PROGRAM DIRECTOR RAUH: This is why I was
13 suggesting when we come back in December we try to find --
14 we'll figure out a way to abrade this information so it's
15 more understandable.

16 DIVISION CHIEF ORR: This one basically
17 elaborates on the landfills that are certified closed.
18 There are four certification reports that have been
19 received. Three approved during the last reporting
20 period. And this basically is the percentage of the
21 landfills that are certified closed and in postclosure
22 that should be.

23 So there is a certain number of landfills that
24 haven't completed the implementation of the closure
25 process. So that's basically what this represents is the

1 percentage of landfills that are closed that should be
2 closed.

3 --o0o--

4 PROGRAM DIRECTOR RAUH: Now we're jumping back
5 the our compliance rates associated with non-landfill
6 facility compliance. This includes both tire facilities
7 and other types of solid waste facilities.

8 And again you see a positive trend here in that
9 we have a decrease in those on the inventory down from 17
10 down to one. And then enforcement orders from 65 previous
11 reporting period down to 26 at this point. Again, good
12 efforts by not only our own staff is acting as EA, but
13 obviously our partners the LEAs as well.

14 --o0o--

15 PROGRAM DIRECTOR RAUH: The next slide over
16 simply breaks those 26 enforcement orders down. So you
17 can see where they reside with respect to active solid
18 waste facilities versus tire facilities.

19 Next slide.

20 --o0o--

21 PROGRAM DIRECTOR RAUH: And finally this slide is
22 the two percent auditing goal that was set for the staff.
23 As you can see at this point, we had completed eight. We
24 do not anticipate any issue in completing the remaining
25 twelve obviously subject to budget approval so we can get

1 out of the office. But generally there won't be any
2 problem in achieving that goal this year.

3 And that concludes my presentation.

4 CHAIRPERSON BROWN: Great. Thank you very much
5 for the information, Ted, and Bill, Mike.

6 Any questions?

7 So we'll look forward to the review of the
8 strategic directive and evaluation of performance against
9 our plan. Great. Thank you.

10 Any other questions? Comments? New business?
11 This meeting is adjourned.

12 (Thereupon the California Integrated Waste
13 Management Strategic Policy Development Committee
14 adjourned at 11:59 a.m.)

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1 CERTIFICATE OF REPORTER

2 I, TIFFANY C. KRAFT, a Certified Shorthand
3 Reporter of the State of California, and Registered
4 Professional Reporter, do hereby certify:

5 That I am a disinterested person herein; that the
6 foregoing hearing was reported in shorthand by me,
7 Tiffany C. Kraft, a Certified Shorthand Reporter of the
8 State of California, and thereafter transcribed into
9 typewriting.

10 I further certify that I am not of counsel or
11 attorney for any of the parties to said hearing nor in any
12 way interested in the outcome of said hearing.

13 IN WITNESS WHEREOF, I have hereunto set my hand
14 this 21st day July, 2008.

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